11. The liquid separation process of claim 8, wherein the step of backwashing when the pressure drop of the service fluid reaches a predetermined level, comprises:

opening simultaneously the outlet ports in both the first and second compartments; and

pumping the backwash fluid through the U-tube inlet port and outflowing the backwash fluid through the outlet ports of each compartment.

REMARKS

In response to the Restriction Requirement mailed on June 5, 2001, claim 6 has been amended and claims 12-14 have been canceled. Claims 6-11 are now pending in this application.

Furthermore, for clarity applicant is submitting herewith under separate cover a new Figure 12 to replace the existing Figure 12. The new Figure 12 is supported by the Specification on pages 6 and 7.

In response to the Restriction Requirement, applicant elects to continue prosecution with claims 6-11 which are directed to species (I), which is directed to a vertical column with a vertical partition which divides the column into two vertical compartments.

In the Restriction Requirement, the Examiner has stated that claims 8-11 belong in Group II whereas claims 6 and 7 belong in Group I. According to the Examiner, the feature linking the two Groups, i.e., inventions, is the separation apparatus which according to the Examiner does not provide a contribution over the prior art and which is all that is required by claim 12. Claim 12 has been canceled. Claims 8-11 are directly or indirectly dependent from claims 6 and are directed to a process utilizing the apparatus of claim 6. As such, applicant submits that claims 6, 7 and 8-11 are all directed to a single invention.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**."

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By _____
per Constantine Marantidis
Reg. No. 39,759
626/795-9900

CM/cmc

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

On page 3, delete the paragraph beginning on line 15 and replace it with the following:

The disadvantage of this system is that during the regeneration process, where the regenerant flow is from bottom to top, the resin will not be fully compacted due to the tendency of fluidization which causes the regeneration process to be less effective. Because of the low upflow speed of the limited quantity of regenerant as well as the tendency of the resin bed to fall down due to the higher specific gravity of the resin as compared to that of the liquid, more regenerant are required during regeneration although it is still less than that of the cocurrent system.

On page 6, delete the paragraph beginning on line 18 and replace it with the following:

The design of the system of this invention comprises a vertical column divided into two vertical compartments with free space in the lower part so that both compartments are interconnected and form a U tube type connection. They are filled with one or more types of ion exchange resin. The upper part of each compartment is equipped with upper bed containing nozzles. There is a free board above the resin bed to accommodate the expansion of the resin bed occurring after being exhausted or during [regeration] regeneration. The direction of flow during service cycle is from top to bottom in one compartment and upward in the other compartment. The direction of flow during regeneration process, which is conducted from the other compartment, is also from top to bottom and then flows upward through the other side.

On page 7, delete the paragraph beginning on line 6 and replace it with the following:

Because of the U tube form, the force required to compact the resin during service cycle as well as during [regeration] regeneration cycle is very small. Consequently, low velocity is sufficient to compact the resin. The equation is based on the drag force applied by flow against particle.

In the Claims:

Amend claim 6 as follows:

6. (Amended) An apparatus for conducting liquid separation utilizing an ion exchange process, the apparatus comprising:

[at least one] a liquid separation column, [each] the column being divided into first and second vertical compartments, the vertical compartments being joined at their lower ends to form a U-tube portion between the compartments, wherein the first and second compartments are in fluid communication;

each vertical compartment including an upper fluid inlet port located in the top of the compartment, the inlet ports being in fluid communication with the interior of the compartments and an external fluid source;

each vertical compartment being equipped with an upper bed disposed inside each compartment, the beds being proximate to the upper end of the compartments and below the inlet ports;

the upper beds having fluid distribution nozzles, wherein fluid received from the inlet ports is directed into the compartments at a controlled flow rate;

each compartment further including an outlet port for backwashing, each oulet port being disposed adjacent to and below each

upper bed, wherein the outlet ports remove particulate matter larger than the upper bed nozzle openings;

the U-tube portion between the compartments including a lower fluid inlet port, wherein the lower fluid inlet port is in fluid communication with both the first and second vertical compartments; and;

an adsorbant resin layer disposed within each vertical compartment, wherein a free board is defined between a top level of the adsorbant resin layer and the upper bed in each compartment, whereby the free board allows the resin layer to expand and contract during the liquid separation process.